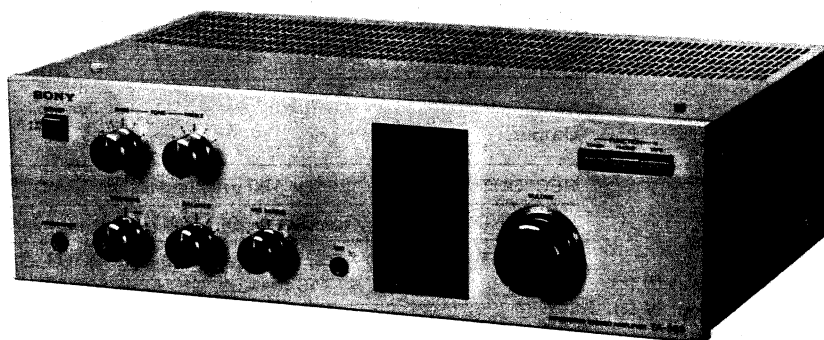


TA-333

*US Model
Canadian Model
AEP Model
UK Model
E Model
SCN Model*




INTEGRATED STEREO AMPLIFIER


SPECIFICATIONS

GENERAL

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

System: Direct output coupling, pure-complementary symmetry power amplifier circuit (SEPP OTL)

Power Requirements: 120 V ac \sim , 60 Hz (US, Canadian model)
240 V ac \sim , 50 Hz (UK model)
220 V ac \sim , 50 Hz (AEP, SCN model)
120, 220 or 240 V ac \sim adjustable, 50/60 Hz (E model)

Power Consumption: 95 W (US, Canadian model)
180 W (AEP, E, SCN model)
240 W (UK model)

Ac Outlets: 1 switched (100 W)
(not provided for SCN model) 2 unswitched (total 200 W)

Dimensions: Approx. 430 (w) x 135 (h) x 290 (d) mm
17 (w) x 5 1/4 (h) x 11 1/2 (d) inches
including projecting parts and controls

Weight: Approx. 6.2 kg, 13 lb 11 oz net
Approx. 7.6 kg, 16 lb 12 oz in shipping carton (AEP, E, UK, SCN model)
Approx. 5.5 kg, 12 lb 2 oz net
Approx. 7 kg, 15 lb 7 oz in shipping carton (US, Canadian model)

— Continued on page 2 —

SONY
SERVICE MANUAL

TA-333

AMPLIFIER SECTION

Power Output and Total Harmonic Distortion: (US, Canadian model) With 8 Ω loads, both channels driven, from 20 – 20,000 Hz; rated 25 W per channel minimum RMS power, with no more than 0.3 % total harmonic distortion from 250 mW to rated output.

Continuous RMS Power Output: At 1 kHz
Less than 0.3% (8Ω) 28 + 28 W (8 Ω)
or 0.3% (4Ω) THD. 28 + 28 W (4 Ω)
both channels driven simultaneously
(AEP, UK, E, SCN model) At 20 Hz – 20 kHz
25 + 25 W (8 Ω)
25 + 25 W (4 Ω)
According to DIN 45500
25 + 25 W (8 Ω)
25 + 25 W (4 Ω)

Power Bandwidth (IHF): 10 Hz – 30 kHz (8 Ω)

Harmonic Distortion: Less than 0.3 % at rated output (8 Ω)
Less than 0.3 % at rated output (4 Ω)
Less than 0.3 % at 1 W output

Intermodulation (IM) Distortion: Less than 0.3 % at rated output
Less than 0.3 % at 1 W output
(60Hz : 7kHz = 4 : 1)

Frequency Response: PHONO RIAA equalization curve
±0.8 dB
TUNER) 10 Hz – 50 kHz +1 -3 dB
TAPE)
MIC 200 Hz – 10 kHz +0 -3 dB

Damping Factor: 30 (8 Ω, 1 kHz)

Tone Controls: BASS ± 8 dB at 100 Hz
TREBLE ± 8 dB at 10 kHz

Loudness (att. 30dB): +6 dB at 100 Hz

Inputs:

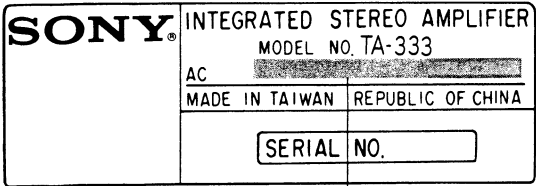
| | Sensitivity | Impedance | Maximum input capability (at 1 kHz, 0.3 % distortion) | S/N (weighting network, input level) |
|------------|-------------|-----------|---|--------------------------------------|
| PHONO | 2.5 mV | 50 kΩ | 110 mV | 72 dB (A, 2.5 mV) |
| TUNER TAPE | 150 mV | 50 kΩ | — | 95 dB (A, 150 mV) |
| MIC | 2 mV | 10 kΩ | — | — |

Outputs:

| | |
|------------|---|
| REC OUT | Voltage 150 mV, Impedance 10 kΩ |
| HEADPHONES | Accepts low and high impedance headphones |
| SPEAKER | Accepts speakers of 8 – 16 Ω (US, Canadian model) or 4 – 16 Ω (AEP, UK, E, SCN model) |

MODEL IDENTIFICATION

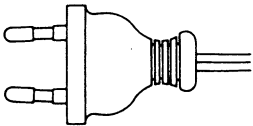
— Specification Label —



US, Canadian model: AC 120V ~ 50Hz 95W
AEP model: AC 220V ~ 50Hz 180W
UK model: AC 240V ~ 50Hz 240W
E1, E2 model: AC 120, 220, 240V ~ 50/60Hz 180W

— Power Cord —

E1 model: euro-plug 1-551-896-00

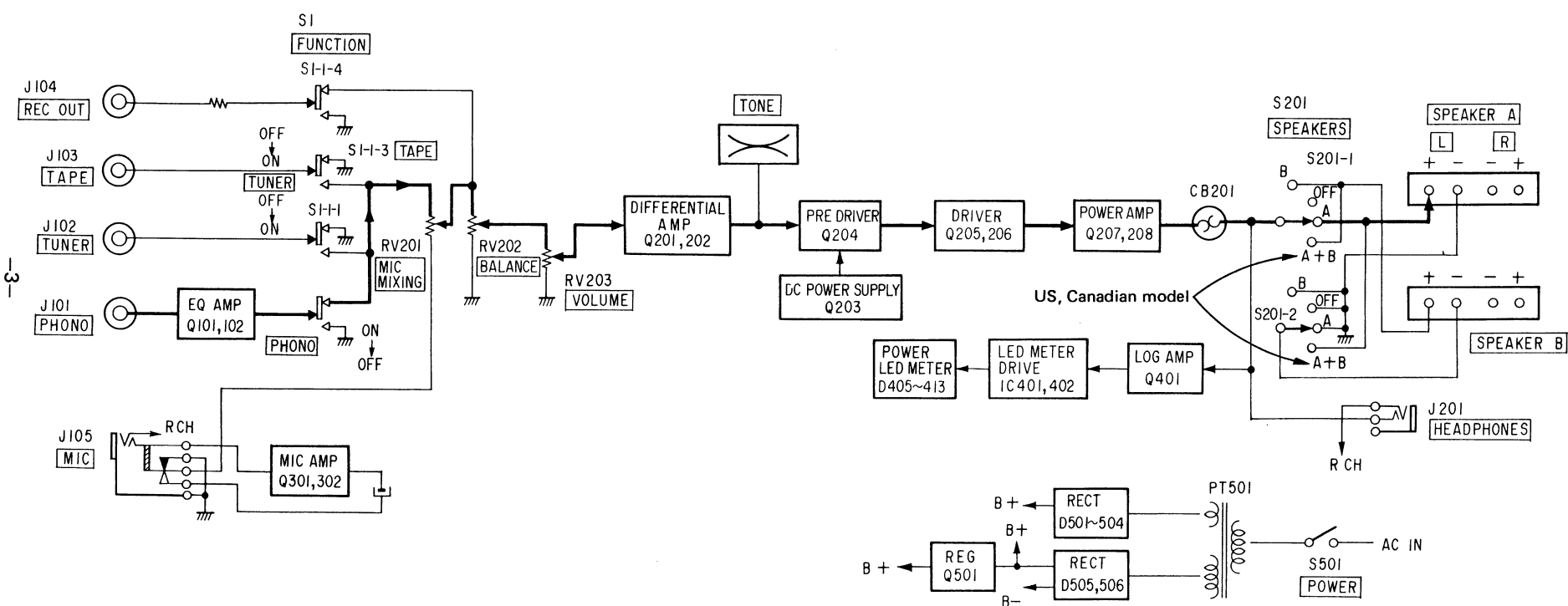


E2 model: parallel-blade plug 1-551-628-00



1. BLOCK DIAGRAM

SECTION 1 OUTLINE

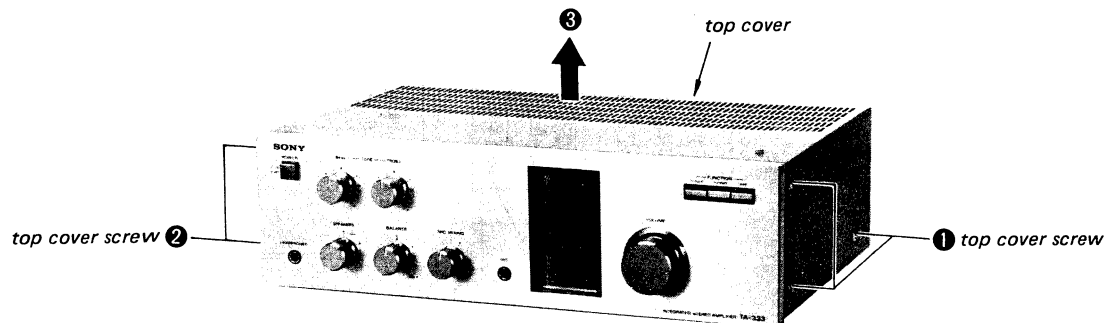


SECTION 2 DISASSEMBLY

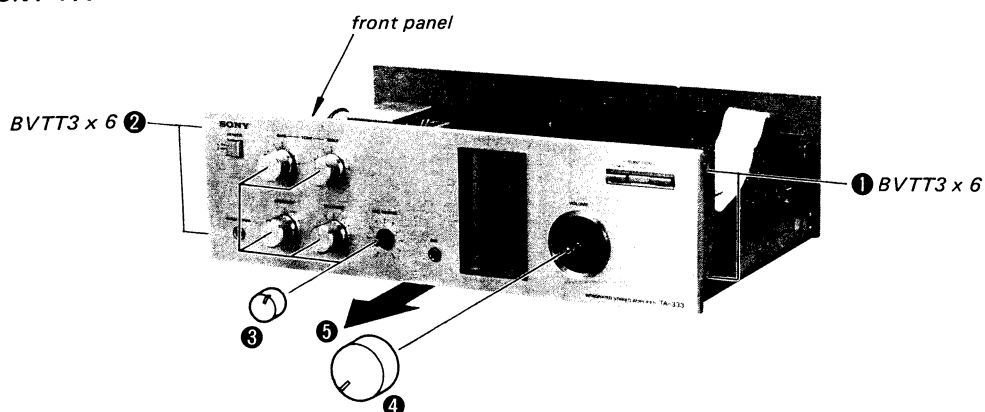
Note:

- Follow the disassembly procedure in the numerical order given.

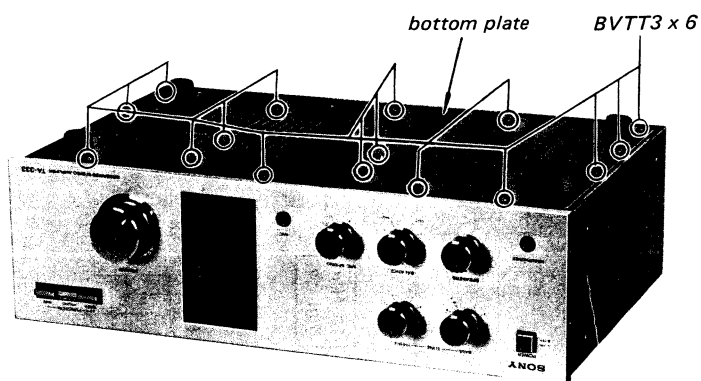
TOP COVER REMOVAL



FRONT PANEL REMOVAL



BOTTOM PLATE REMOVAL



SECTION 3 ADJUSTMENTS

3-1. IDLING CURRENT ADJUSTMENT

Setting:

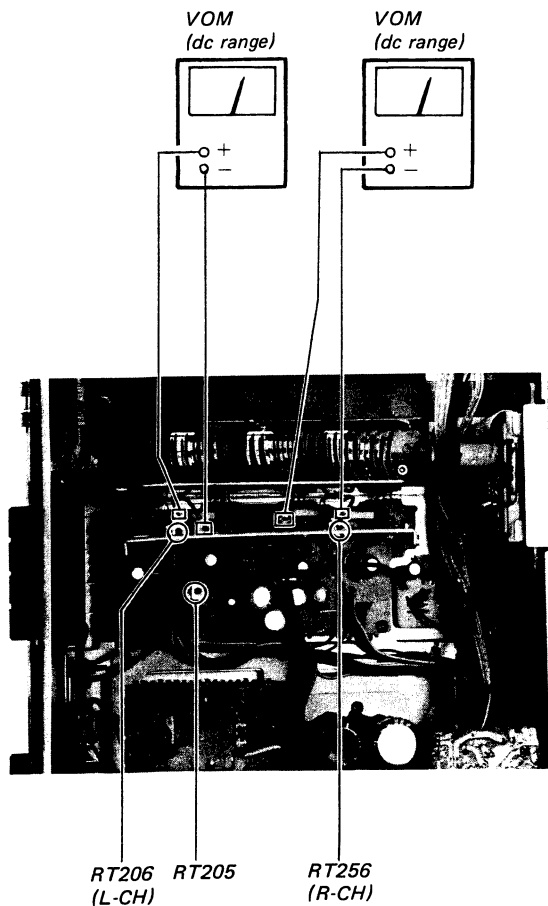
VOLUME control: minimum (fully counterclockwise)

Procedure:

Adjust RT206 (L-CH) and RT256 (R-CH) for 16mV dc reading on the VOM.

Adjustment Location:

— power amp board —

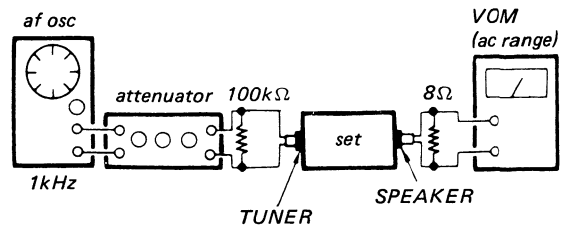


3-2. POWER LEVEL METER ADJUSTMENT

Setting:

FUNCTION switch: TUNER

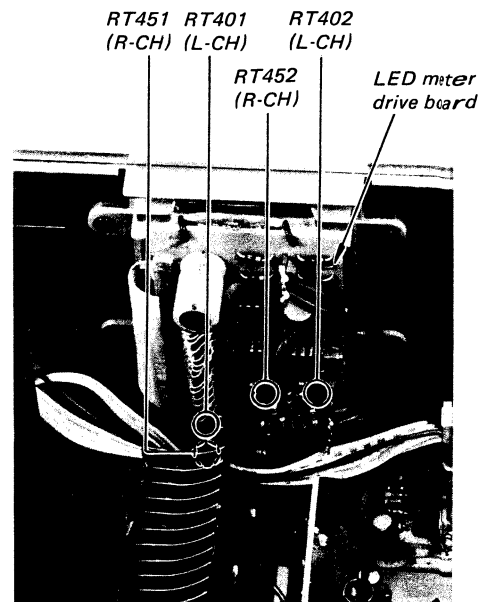
Procedure:



1. Turn the VOLUME control for a 2.83V (1W) reading on VOM.
2. Adjust RT402 (L-CH) and RT452 (R-CH) so that the power meter indicates 1W.
3. Adjust RT401 (L-CH) and RT451 (R-CH) so that the power meter indicates 25W.

Adjustment Location:

— power amp board —



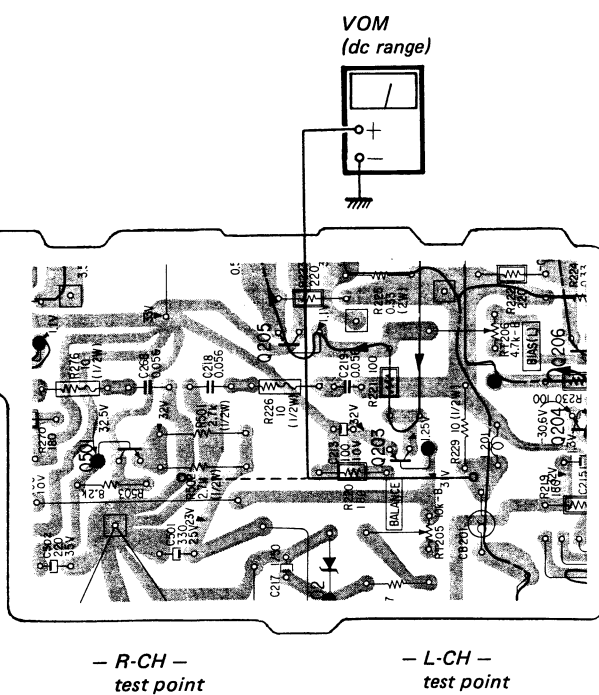
3-3. DC BALANCE ADJUSTMENT

Procedure:

Adjust RT205 for -70mV to $+70\text{mV}$ reading on the VOM.

Adjustment Location:

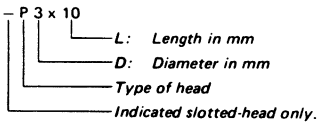
— power amp board —



| 1/4 WATT CARBON RESISTORS [Ⓐ] | | | | | | | | | | Note: Circled letter [Ⓐ] is applicable European models only. | | | |
|--|--------------|----|--------------|-----|--------------|------|--------------|-----|--------------|---|--------------|------|--------------|
| Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. |
| 1.0 | 1-246-401-00 | 10 | 1-246-425-00 | 100 | 1-246-449-00 | 1.0k | 1-246-473-00 | 10k | 1-246-497-00 | 100k | 1-246-521-00 | 1.0M | 1-246-545-00 |
| 1.1 | 1-246-402-00 | 11 | 1-246-426-00 | 110 | 1-246-450-00 | 1.1k | 1-246-474-00 | 11k | 1-246-498-00 | 110k | 1-246-522-00 | 1.1M | 1-210-814-00 |
| 1.2 | 1-246-403-00 | 12 | 1-246-427-00 | 120 | 1-246-451-00 | 1.2k | 1-246-475-00 | 12k | 1-246-499-00 | 120k | 1-246-523-00 | 1.2M | 1-210-815-00 |
| 1.3 | 1-246-404-00 | 13 | 1-246-428-00 | 130 | 1-246-452-00 | 1.3k | 1-246-476-00 | 13k | 1-246-500-00 | 130k | 1-246-524-00 | 1.3M | 1-210-816-00 |
| 1.5 | 1-246-405-00 | 15 | 1-246-429-00 | 150 | 1-246-453-00 | 1.5k | 1-246-477-00 | 15k | 1-246-501-00 | 150k | 1-246-525-00 | 1.5M | 1-210-817-00 |
| 1.6 | 1-246-406-00 | 16 | 1-246-430-00 | 160 | 1-246-454-00 | 1.6k | 1-246-478-00 | 16k | 1-246-502-00 | 160k | 1-246-526-00 | 1.6M | 1-210-818-00 |
| 1.8 | 1-246-407-00 | 18 | 1-246-431-00 | 180 | 1-246-455-00 | 1.8k | 1-246-479-00 | 18k | 1-246-503-00 | 180k | 1-246-527-00 | 1.8M | 1-210-819-00 |
| 2.0 | 1-246-408-00 | 20 | 1-246-432-00 | 200 | 1-246-456-00 | 2.0k | 1-246-480-00 | 20k | 1-246-504-00 | 200k | 1-246-528-00 | 2.0M | 1-210-820-00 |
| 2.2 | 1-246-409-00 | 22 | 1-246-433-00 | 220 | 1-246-457-00 | 2.2k | 1-246-481-00 | 22k | 1-246-505-00 | 220k | 1-246-529-00 | 2.2M | 1-210-821-00 |
| 2.4 | 1-246-410-00 | 24 | 1-246-434-00 | 240 | 1-246-458-00 | 2.4k | 1-246-482-00 | 24k | 1-246-506-00 | 240k | 1-246-530-00 | 2.4M | 1-244-754-00 |
| 2.7 | 1-246-411-00 | 27 | 1-246-435-00 | 270 | 1-246-459-00 | 2.7k | 1-246-483-00 | 27k | 1-246-507-00 | 270k | 1-246-531-00 | 2.7M | 1-244-755-00 |
| 3.0 | 1-246-412-00 | 30 | 1-246-436-00 | 300 | 1-246-460-00 | 3.0k | 1-246-484-00 | 30k | 1-246-508-00 | 300k | 1-246-532-00 | 3.0M | 1-244-756-00 |
| 3.3 | 1-246-413-00 | 33 | 1-246-437-00 | 330 | 1-246-461-00 | 3.3k | 1-246-485-00 | 33k | 1-246-509-00 | 330k | 1-246-533-00 | 3.3M | 1-244-757-00 |
| 3.6 | 1-246-414-00 | 36 | 1-246-438-00 | 360 | 1-246-462-00 | 3.6k | 1-246-486-00 | 36k | 1-246-510-00 | 360k | 1-246-534-00 | 3.6M | 1-244-758-00 |
| 3.9 | 1-246-415-00 | 39 | 1-246-439-00 | 390 | 1-246-463-00 | 3.9k | 1-246-487-00 | 39k | 1-246-511-00 | 390k | 1-246-535-00 | 3.9M | 1-244-759-00 |
| 4.3 | 1-246-416-00 | 43 | 1-246-440-00 | 430 | 1-246-464-00 | 4.3k | 1-246-488-00 | 43k | 1-246-512-00 | 430k | 1-246-536-00 | 4.3M | 1-244-760-00 |
| 4.7 | 1-246-417-00 | 47 | 1-246-441-00 | 470 | 1-246-465-00 | 4.7k | 1-246-489-00 | 47k | 1-246-513-00 | 470k | 1-246-537-00 | 4.7M | 1-244-761-00 |
| 5.1 | 1-246-418-00 | 51 | 1-246-442-00 | 510 | 1-246-466-00 | 5.1k | 1-246-490-00 | 51k | 1-246-514-00 | 510k | 1-246-538-00 | 5.1M | 1-244-762-00 |
| 5.6 | 1-246-419-00 | 56 | 1-246-443-00 | 560 | 1-246-467-00 | 5.6k | 1-246-491-00 | 56k | 1-246-515-00 | 560k | 1-246-539-00 | | |
| 6.2 | 1-246-420-00 | 62 | 1-246-444-00 | 620 | 1-246-468-00 | 6.2k | 1-246-492-00 | 62k | 1-246-516-00 | 620k | 1-246-540-00 | | |
| 6.8 | 1-246-421-00 | 68 | 1-246-445-00 | 680 | 1-246-469-00 | 6.8k | 1-246-493-00 | 68k | 1-246-517-00 | 680k | 1-246-541-00 | | |
| 7.5 | 1-246-422-00 | 75 | 1-246-446-00 | 750 | 1-246-470-00 | 7.5k | 1-246-494-00 | 75k | 1-246-518-00 | 750k | 1-246-542-00 | | |
| 8.2 | 1-246-423-00 | 82 | 1-246-447-00 | 820 | 1-246-471-00 | 8.2k | 1-246-495-00 | 82k | 1-246-519-00 | 820k | 1-246-543-00 | | |
| 9.1 | 1-246-424-00 | 91 | 1-246-448-00 | 910 | 1-246-472-00 | 9.1k | 1-246-496-00 | 91k | 1-246-520-00 | 910k | 1-246-544-00 | | |

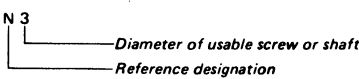
HARDWARE NOMENCLATURE













Screw:
















Unless otherwise indicated, it means cross-recessed head (Phillips type).

Nut, Washer, Retaining ring:



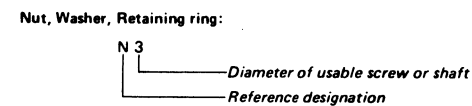
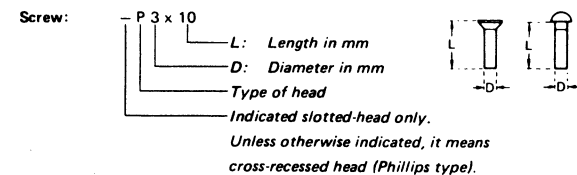
| Reference Designation | Shape | Description | Remarks |
|-----------------------|---|---|--|
| SCREWS | | | |
| P |  | pan-head screw | binding-head (B) screw for replacement |
| PWH |  | pan-head screw with washer face | binding-head (B) screw and flat washer for replacement |
| PS PSP |  | pan-head screw with spring washer | binding-head (B) screw and spring washer for replacement |
| PSW PSPW |  | pan-head screw with spring and flat washers | binding-head (B) screw and spring and flat washers for replacement |
| R |  | round-head screw | binding-head (B) screw for replacement |
| K |  | flat-countersunk-head screw | |
| RK |  | oval-countersunk-head screw | |
| B |  | binding-head screw | |
| T |  | truss-head screw | binding-head (B) screw for replacement |
| F |  | flat-fillister-head screw | |
| RF |  | fillister-head screw | |
| BV |  | braizer-head screw | |

| Reference Designation | Shape | Description | Remarks |
|----------------------------|---|--|---|
| SELF-TAPPING SCREWS | | | |
| TA |  | self-tapping screw | ex: TA, P 3 x 10 |
| PTP |  | pan-head self-tapping screw | binding-head self-tapping (TA, B) screw for replacement |
| PTPWH |  | pan-head self-tapping screw with washer face | binding-head self-tapping (TA, B) screw and flat washer for replacement |
| PTTWH |  | pan-head thread-rolling screw with washer face | binding-head (B) screw and flat washer for replacement |
| SET SCREWS | | | |
| SC |  | set screw | |
| SC |  | hexagon-socket set screw | ex: SC 2.6 x 4, hexagon socket |
| NUT | | | |
| N |  | nut | |
| WASHERS | | | |
| W |  | flat washer | |
| SW |  | spring washer | |
| LW |  | internal-tooth lock washer | ex: LW3, internal |
| LW |  | external-tooth lock washer | ex: LW3, external |
| RETAINING RINGS | | | |
| E |  | retaining ring | |
| G |  | grip-type retaining ring | |

1/4 WATT CARBON RESISTORS Ⓐ **Note:** Circled letter Ⓐ is applicable to European models only.

| Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. |
|-----|--------------|----|--------------|-----|--------------|------|--------------|-----|--------------|------|--------------|------|--------------|
| 1.0 | 1-246-401-00 | 10 | 1-246-425-00 | 100 | 1-246-449-00 | 1.0k | 1-246-473-00 | 10k | 1-246-497-00 | 100k | 1-246-521-00 | 1.0M | 1-246-545-00 |
| 1.1 | 1-246-402-00 | 11 | 1-246-426-00 | 110 | 1-246-450-00 | 1.1k | 1-246-474-00 | 11k | 1-246-498-00 | 110k | 1-246-522-00 | 1.1M | 1-210-814-00 |
| 1.2 | 1-246-403-00 | 12 | 1-246-427-00 | 120 | 1-246-451-00 | 1.2k | 1-246-475-00 | 12k | 1-246-499-00 | 120k | 1-246-523-00 | 1.2M | 1-210-815-00 |
| 1.3 | 1-246-404-00 | 13 | 1-246-428-00 | 130 | 1-246-452-00 | 1.3k | 1-246-476-00 | 13k | 1-246-500-00 | 130k | 1-246-524-00 | 1.3M | 1-210-816-00 |
| 1.5 | 1-246-405-00 | 15 | 1-246-429-00 | 150 | 1-246-453-00 | 1.5k | 1-246-477-00 | 15k | 1-246-501-00 | 150k | 1-246-525-00 | 1.5M | 1-210-817-00 |
| 1.6 | 1-246-406-00 | 16 | 1-246-430-00 | 160 | 1-246-454-00 | 1.6k | 1-246-478-00 | 16k | 1-246-502-00 | 160k | 1-246-526-00 | 1.6M | 1-210-818-00 |
| 1.8 | 1-246-407-00 | 18 | 1-246-431-00 | 180 | 1-246-455-00 | 1.8k | 1-246-479-00 | 18k | 1-246-503-00 | 180k | 1-246-527-00 | 1.8M | 1-210-819-00 |
| 2.0 | 1-246-408-00 | 20 | 1-246-432-00 | 200 | 1-246-456-00 | 2.0k | 1-246-480-00 | 20k | 1-246-504-00 | 200k | 1-246-528-00 | 2.0M | 1-210-820-00 |
| 2.2 | 1-246-409-00 | 22 | 1-246-433-00 | 220 | 1-246-457-00 | 2.2k | 1-246-481-00 | 22k | 1-246-505-00 | 220k | 1-246-529-00 | 2.2M | 1-210-821-00 |
| 2.4 | 1-246-410-00 | 24 | 1-246-434-00 | 240 | 1-246-458-00 | 2.4k | 1-246-482-00 | 24k | 1-246-506-00 | 240k | 1-246-530-00 | 2.4M | 1-244-754-00 |
| 2.7 | 1-246-411-00 | 27 | 1-246-435-00 | 270 | 1-246-459-00 | 2.7k | 1-246-483-00 | 27k | 1-246-507-00 | 270k | 1-246-531-00 | 2.7M | 1-244-755-00 |
| 3.0 | 1-246-412-00 | 30 | 1-246-436-00 | 300 | 1-246-460-00 | 3.0k | 1-246-484-00 | 30k | 1-246-508-00 | 300k | 1-246-532-00 | 3.0M | 1-244-756-00 |
| 3.3 | 1-246-413-00 | 33 | 1-246-437-00 | 330 | 1-246-461-00 | 3.3k | 1-246-485-00 | 33k | 1-246-509-00 | 330k | 1-246-533-00 | 3.3M | 1-244-757-00 |
| 3.6 | 1-246-414-00 | 36 | 1-246-438-00 | 360 | 1-246-462-00 | 3.6k | 1-246-486-00 | 36k | 1-246-510-00 | 360k | 1-246-534-00 | 3.6M | 1-244-758-00 |
| 3.9 | 1-246-415-00 | 39 | 1-246-439-00 | 390 | 1-246-463-00 | 3.9k | 1-246-487-00 | 39k | 1-246-511-00 | 390k | 1-246-535-00 | 3.9M | 1-244-759-00 |
| 4.3 | 1-246-416-00 | 43 | 1-246-440-00 | 430 | 1-246-464-00 | 4.3k | 1-246-488-00 | 43k | 1-246-512-00 | 430k | 1-246-536-00 | 4.3M | 1-244-760-00 |
| 4.7 | 1-246-417-00 | 47 | 1-246-441-00 | 470 | 1-246-465-00 | 4.7k | 1-246-489-00 | 47k | 1-246-513-00 | 470k | 1-246-537-00 | 4.7M | 1-244-761-00 |
| 5.1 | 1-246-418-00 | 51 | 1-246-442-00 | 510 | 1-246-466-00 | 5.1k | 1-246-490-00 | 51k | 1-246-514-00 | 510k | 1-246-538-00 | 5.1M | 1-244-762-00 |
| 5.6 | 1-246-419-00 | 56 | 1-246-443-00 | 560 | 1-246-467-00 | 5.6k | 1-246-491-00 | 56k | 1-246-515-00 | 560k | 1-246-539-00 | | |
| 6.2 | 1-246-420-00 | 62 | 1-246-444-00 | 620 | 1-246-468-00 | 6.2k | 1-246-492-00 | 62k | 1-246-516-00 | 620k | 1-246-540-00 | | |
| 6.8 | 1-246-421-00 | 68 | 1-246-445-00 | 680 | 1-246-469-00 | 6.8k | 1-246-493-00 | 68k | 1-246-517-00 | 680k | 1-246-541-00 | | |
| 7.5 | 1-246-422-00 | 75 | 1-246-446-00 | 750 | 1-246-470-00 | 7.5k | 1-246-494-00 | 75k | 1-246-518-00 | 750k | 1-246-542-00 | | |
| 8.2 | 1-246-423-00 | 82 | 1-246-447-00 | 820 | 1-246-471-00 | 8.2k | 1-246-495-00 | 82k | 1-246-519-00 | 820k | 1-246-543-00 | | |
| 9.1 | 1-246-424-00 | 91 | 1-246-448-00 | 910 | 1-246-472-00 | 9.1k | 1-246-496-00 | 91k | 1-246-520-00 | 910k | 1-246-544-00 | | |

HARDWARE NOMENCLATURE



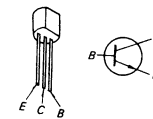
| Reference Designation | Shape | Description | Remarks |
|-----------------------|-------|---|--|
| SCREWS | | | |
| P | | pan-head screw | binding-head (B) screw for replacement |
| PWH | | pan-head screw with washer face | binding-head (B) screw and flat washer for replacement |
| PS PSP | | pan-head screw with spring washer | binding-head (B) screw and spring washer for replacement |
| PSW PSPW | | pan-head screw with spring and flat washers | binding-head (B) screw and spring and flat washers for replacement |
| R | | round-head screw | binding-head (B) screw for replacement |
| K | | flat-countersunk-head screw | |
| RK | | oval-countersunk-head screw | |
| B | | binding-head screw | |
| T | | truss-head screw | binding-head (B) screw for replacement |
| F | | flat-fillister-head screw | |
| RF | | fillister-head screw | |
| BV | | brazer-head screw | |

| Reference Designation | Shape | Description | Remarks |
|----------------------------|-------|--|---|
| SELF-TAPPING SCREWS | | | |
| TA | | self-tapping screw | ex: TA, P 3 x 10 |
| PTP | | pan-head self-tapping screw | binding-head self-tapping (TA, B) screw for replacement |
| PTPWH | | pan-head self-tapping screw with washer face | binding-head self-tapping (TA, B) screw and flat washer for replacement |
| PTTWH | | pan-head thread-rolling screw with washer face | binding-head (B) screw and flat washer for replacement |
| SET SCREWS | | | |
| SC | | set screw | |
| SC | | hexagon-socket set screw | ex: SC 2.6 x 4, hexagon socket |
| NUT | | | |
| N | | nut | |
| WASHERS | | | |
| W | | flat washer | |
| SW | | spring washer | |
| LW | | internal-tooth lock washer | ex: LW3, internal |
| LW | | external-tooth lock washer | ex: LW3, external |
| RETAINING RINGS | | | |
| E | | retaining ring | |
| G | | grip-type retaining ring | |

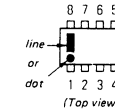
Replacement Semiconductors

For replacement, use semiconductors except in ().

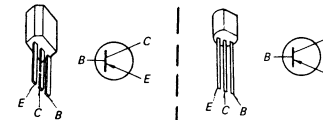
Q101, 102 }
Q151, 152 } : 2SC1362 (2SC900F)
Q301, 302 }



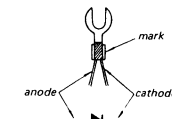
IC401, 402 }
IC451, 452 } : TL489CP



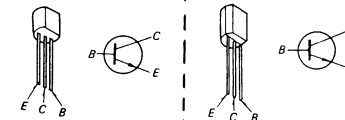
Q201, 202 }
Q251, 252 } : 2SA1027R (2SA733Q)
Q203, 253 } : 2SA1027R (2SA733P)



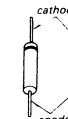
D201, 251: SV04S



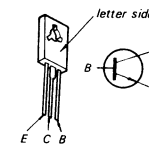
Q204, 254 }
Q501 } : 2SC1364 (2SC945P)



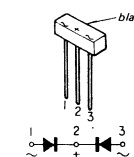
D202 : EQB01-16 (RD16EB)
D401, 402 }
D451, 452 } : 1T22AM (1S188AM)
D403, 404 }
D453, 454 } : 1S953
D501-504 : 10E2 (1N4002)



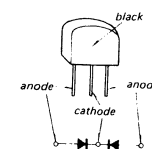
Q205, 255: 2SD414 (2SD414R)



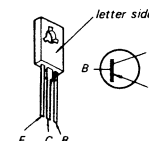
D505: S3VC40



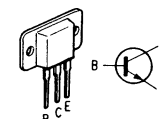
(10DC1N)



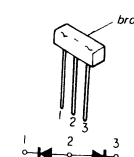
Q206, 256: 2SB548 (2SB548R)



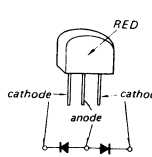
Q207, 257: 2SD586R



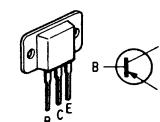
D506: S3VC40R



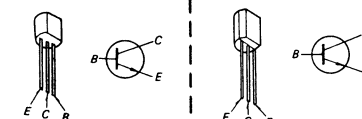
(10DC1R)

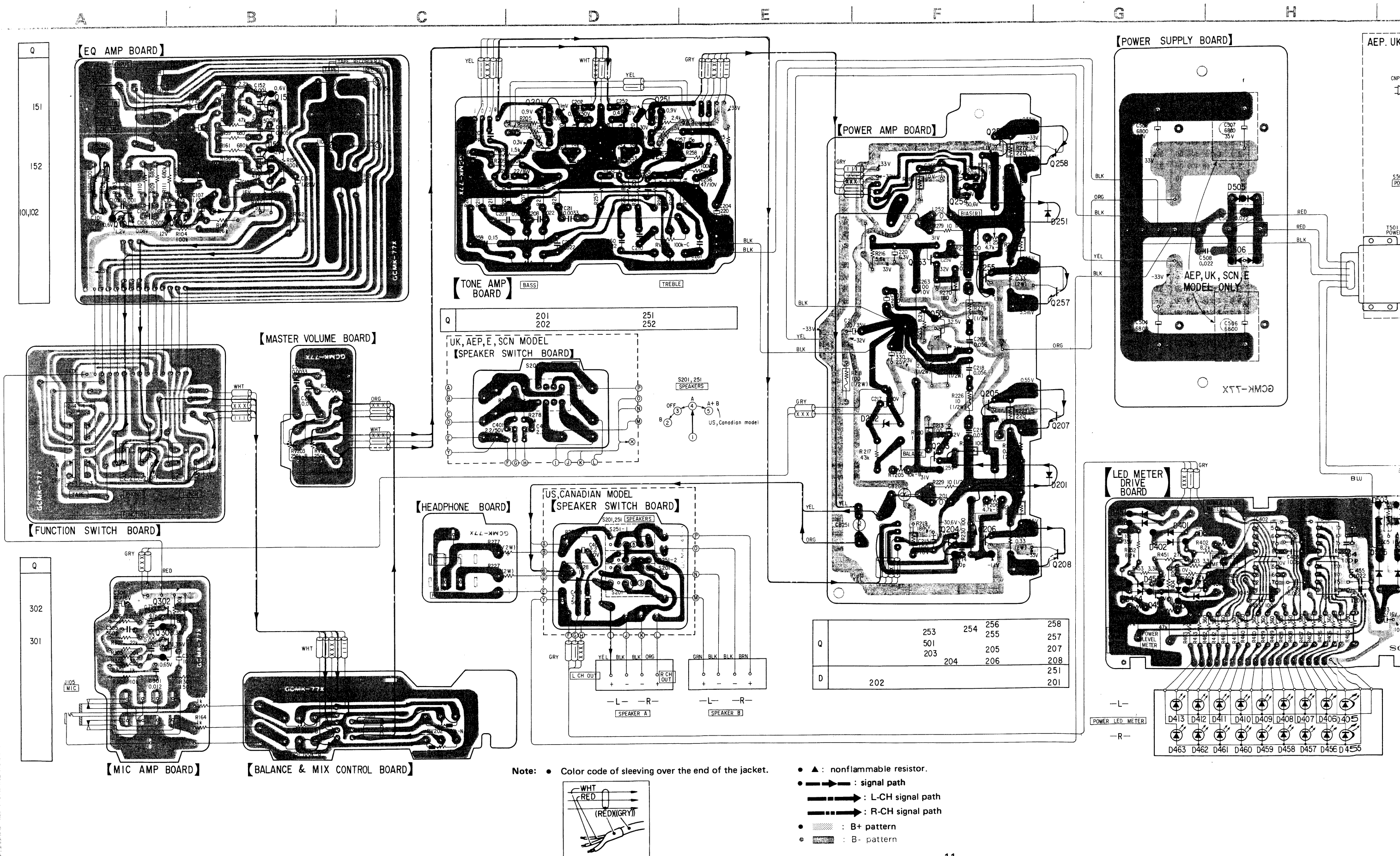


Q208, 258: 2SB616R

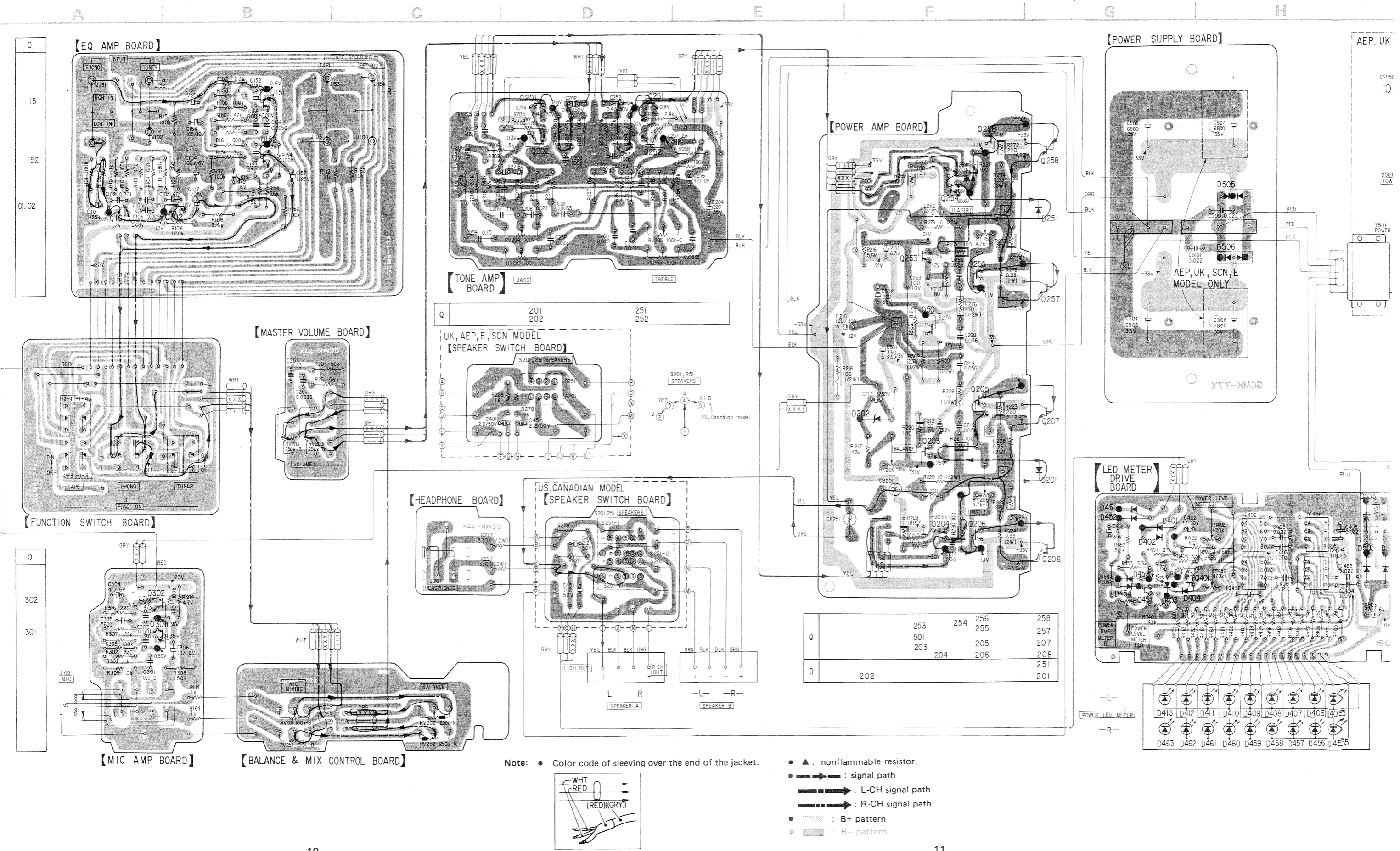


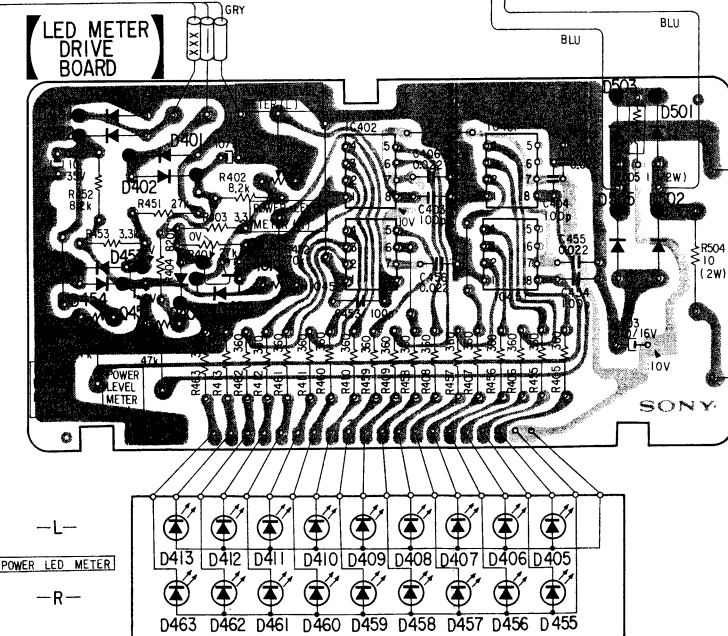
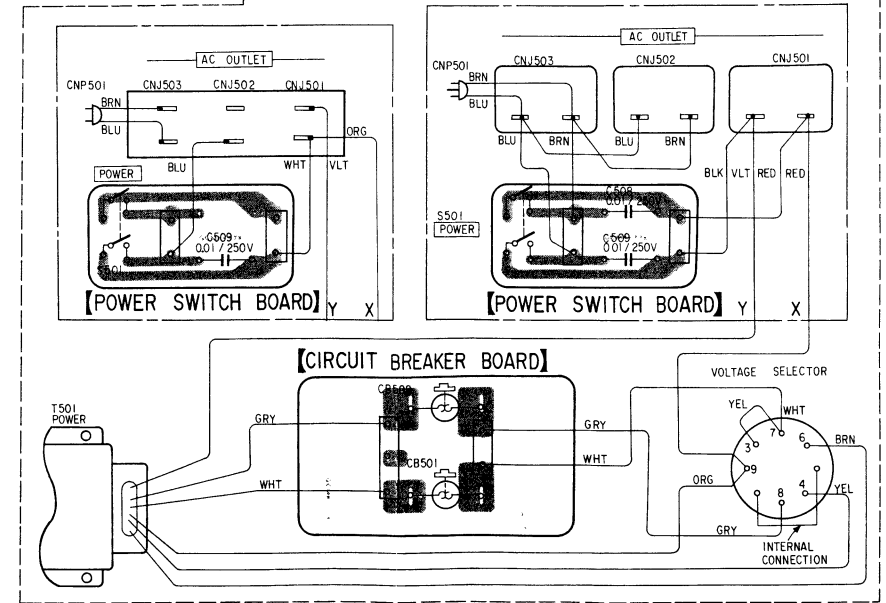
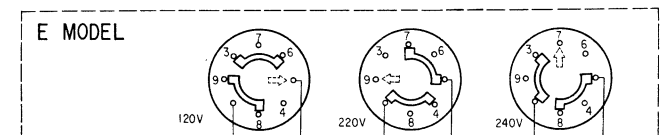
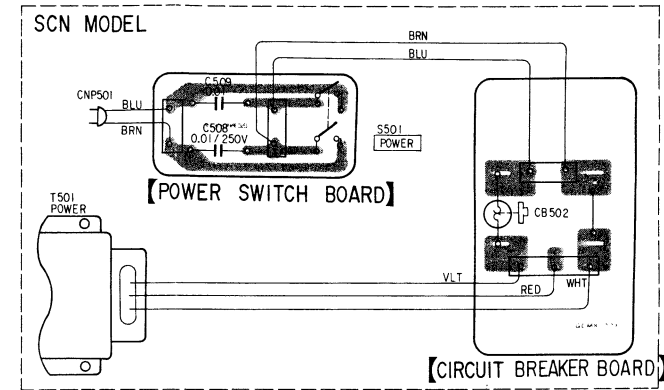
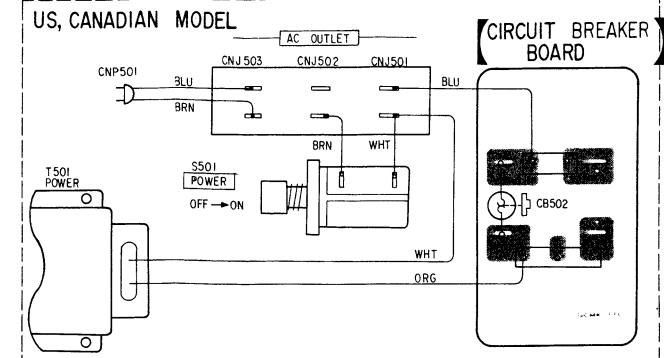
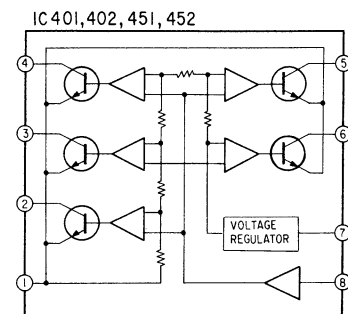
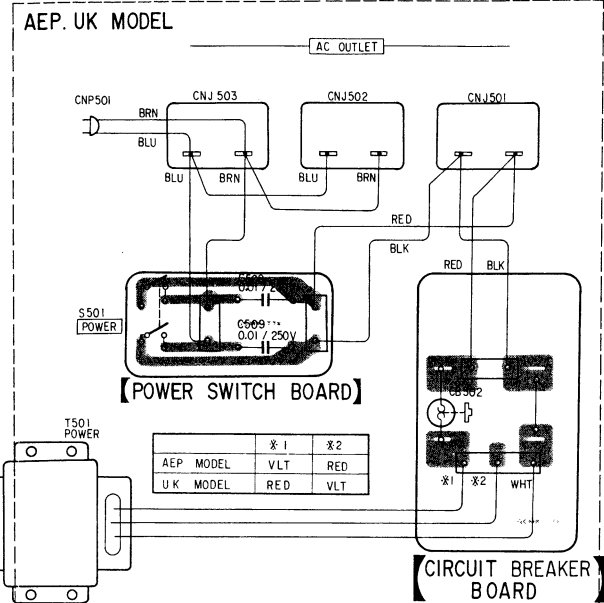
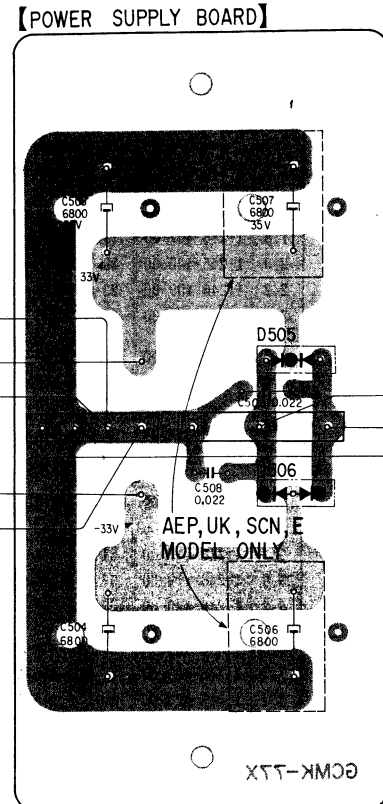
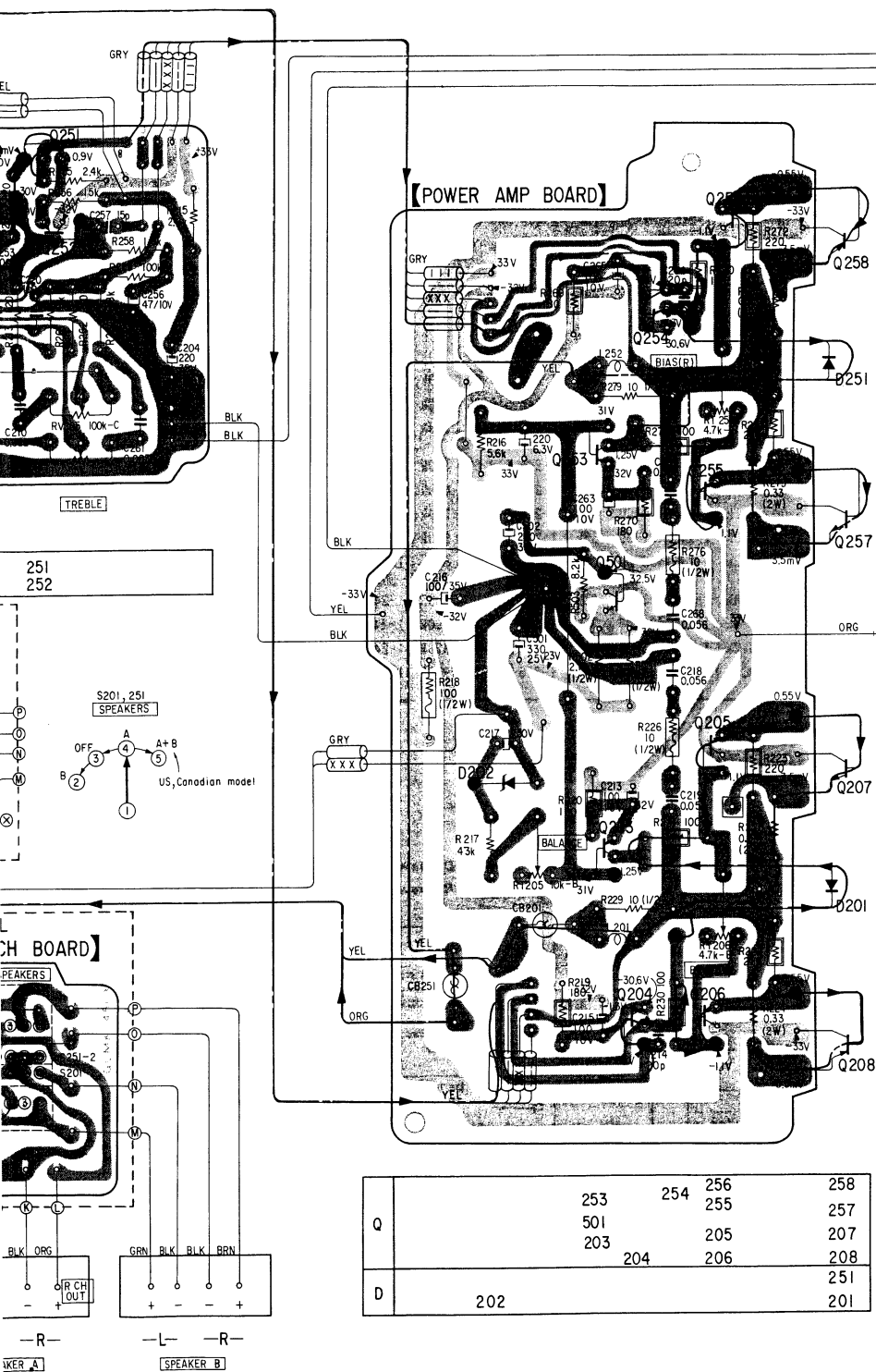
Q401, 451: 2SC1364 (2SC945Q)










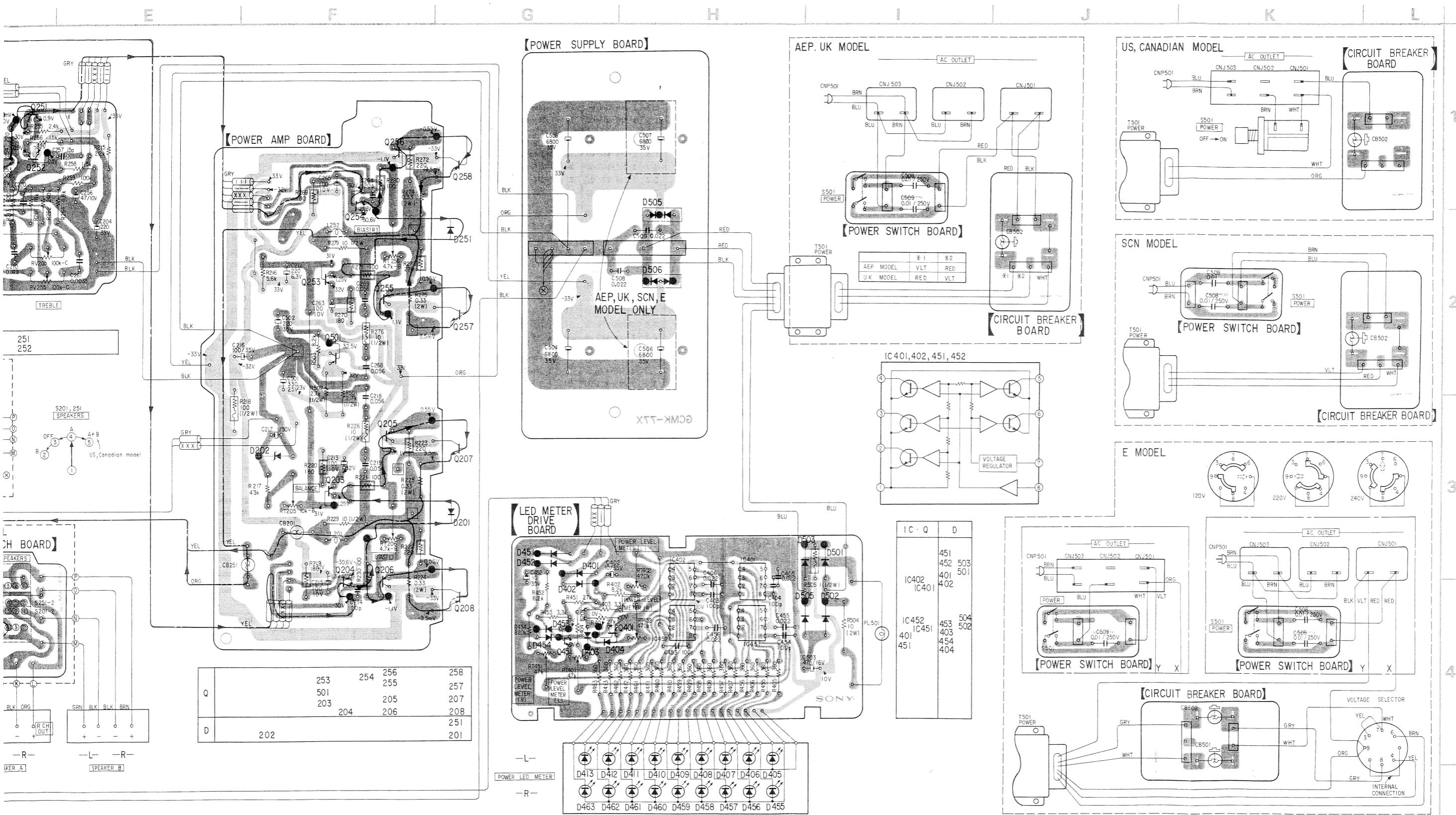
4-1. MOUNTING DIAGRAM
- Conductor Side - Replacement Semiconductors: See page 9.










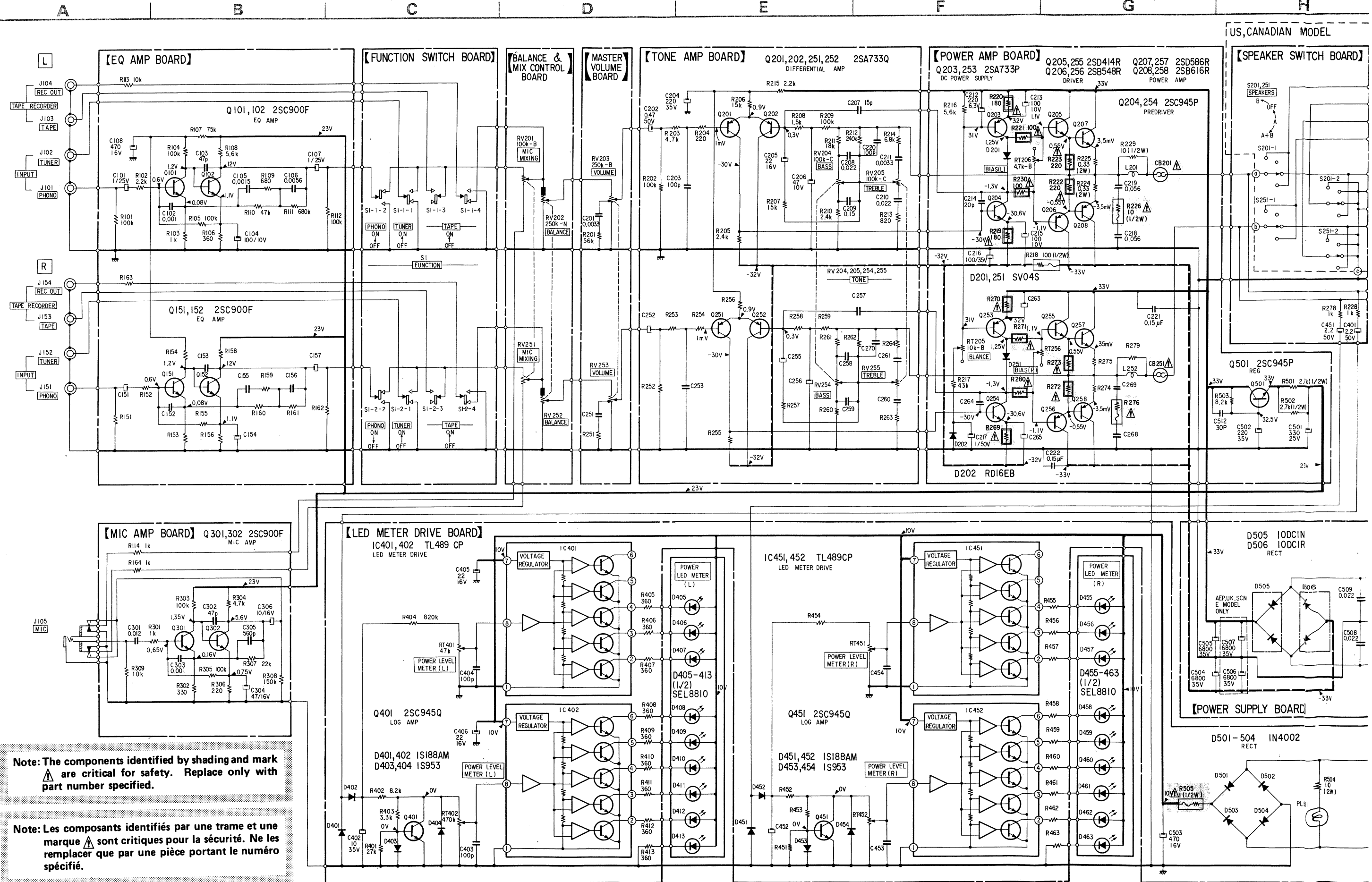
| IC · Q | D |
|--------|---------|
| IC402 | 451 |
| IC401 | 452 503 |
| | 401 501 |
| | 402 |
| IC452 | |
| IC451 | 504 |
| 401 | 453 502 |
| 451 | 403 |
| | 454 |
| | 404 |

- ▲ : nonflammable resistor.
-  : signal path
-  : L-CH signal path
-  : R-CH signal path
-  : B+ pattern
-  : B- pattern

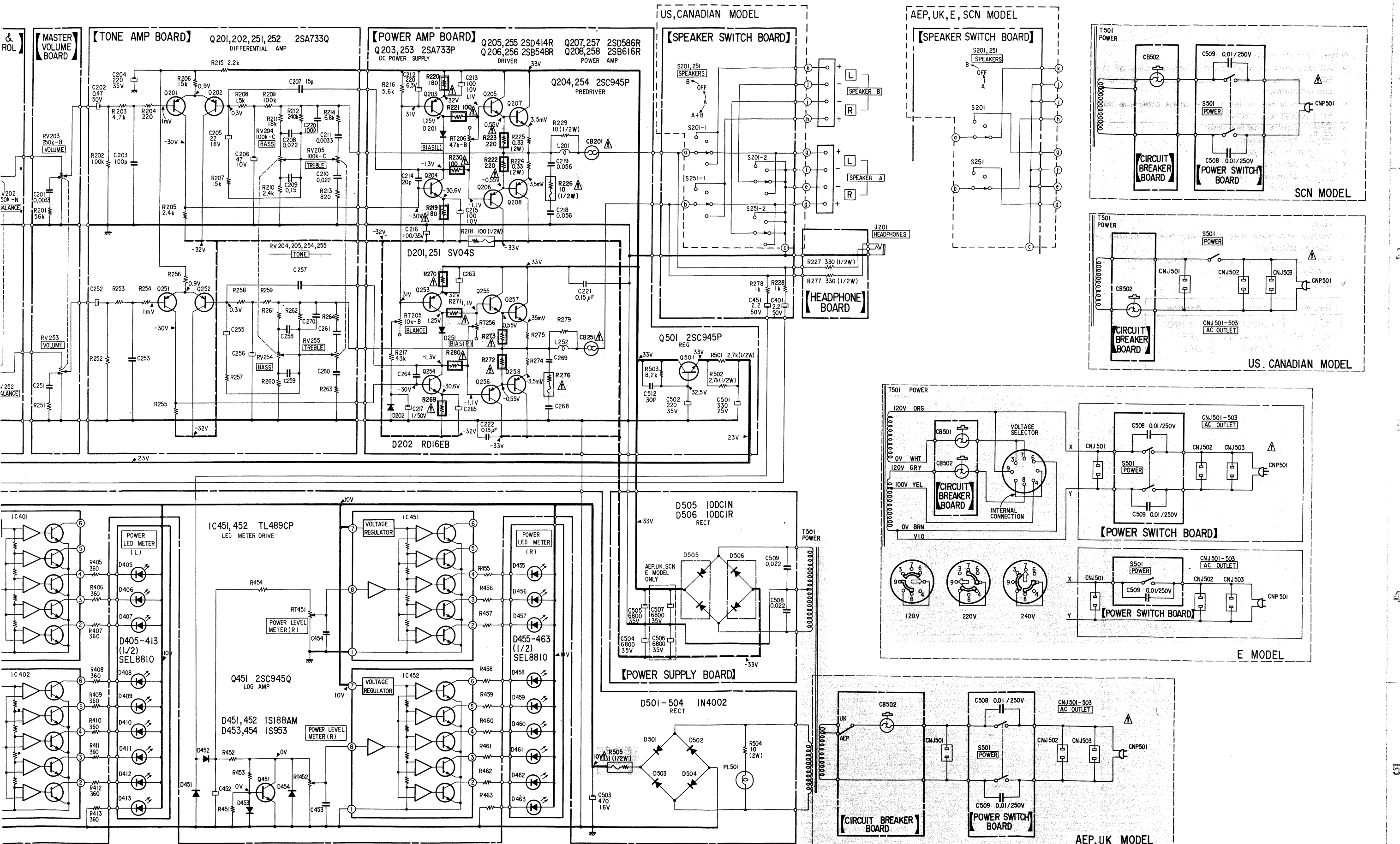


sewing over the end of the jacket.







- ▲ : nonflammable resistor.
-  : signal path
-  : L-CH signal path
-  : R-CH signal path
-  : B+ pattern
-  : B- pattern



D E F G H I J K



Notes: (For schematic diagram)

- All capacitors are in μF unless otherwise noted. $\text{pF} = \mu\text{F} \times 10^{-6}$
- 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, $\frac{1}{2}\text{W}$ unless otherwise noted.
 $\text{k}\Omega$: 1000 Ω , $\text{M}\Omega$: 1000 $\text{k}\Omega$
-  : non-flammable resistor.
-  : fusible resistor.
- Δ : internal component.
-  : panel designation.
-  : adjustment for repair.
-  : B+ bus.
-  : B- bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- Readings are taken under no-signal conditions with a VOM (20k Ω /V).
- Switch



SECTION 6 ELECTRICAL PARTS LIST

Note: Circled letters (A to Z) are applicable to European models only.


| Ref. No. | Part No. | Description |
|-----------------------|--------------|--------------|
| SEMICONDUCTORS | | |
| Transistors | | |
| ⇒ Q101, 102, 151, 152 | 8-729-665-47 | (B) 2SC1362 |
| ⇒ Q201, 202 | 8-729-612-77 | (B) 2SA1027R |
| ⇒ Q203, 253 | 8-729-612-77 | (B) 2SA1027R |
| ⇒ Q204, 254 | 8-729-663-47 | (B) 2SC1364 |
| ⇒ Q205, 255 | 8-729-141-43 | (B) 2SD414 |
| ⇒ Q206, 256 | 8-729-154-83 | (C) 2SB548 |
| Q207, 257 | 1-800-911-11 | (D) 2SD586R |
| Q208, 258 | 1-800-907-11 | (D) 2SB616R |
| ⇒ Q251, 252 | 8-729-612-77 | (B) 2SA1027R |
| ⇒ Q301, 302 | 8-729-665-47 | (B) 2SC1362 |
| ⇒ Q401, 451 | 8-719-422-21 | (B) 2SC1364 |
| Q501 | 8-729-663-47 | (B) 2SC1364 |
| ICs | | |
| IC401, 402 | 8-759-904-89 | (D) TL489CP |
| IC451, 452 | 8-759-904-89 | (D) TL489CP |
| Diodes | | |
| D201, 251 | 8-719-300-11 | (C) SV04S |
| ⇒ D202 | 8-719-931-16 | (B) EQB01-16 |
| ⇒ D401, 402 | 8-719-422-21 | (B) 1T22AM |
| D403, 404 | 8-719-815-55 | (B) 1S953 |
| D405-413 | 1-800-998-11 | SEL8810 |
| ⇒ D451, 452 | 8-719-422-21 | (B) 1T22AM |
| D453, 454 | 8-719-815-55 | (B) 1S953 |
| D455-463 | 1-800-998-11 | SEL8810 |
| ⇒ D501-504 | 8-719-200-02 | (B) 10E2 |
| ⇒ D505 | 8-719-500-34 | (C) S3VC40 |
| ⇒ D506 | 8-719-501-34 | (C) S3VC40R |

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics and tantalums. p : μF , elect : electrolytic

| | | | | |
|-----------|--------------|------------|-----|----------|
| C101, 151 | 1-131-236-00 | (B) 1 | 25V | tantalum |
| C102, 152 | 1-102-074-00 | (A) 0.001 | | |
| C103, 153 | 1-101-880-00 | (A) 47p | | |
| C104, 154 | 1-123-307-00 | (B) 100 | 10V | elect |
| C105, 155 | 1-108-559-00 | (B) 0.0015 | | mylar |
| C106, 156 | 1-108-573-00 | (B) 0.0056 | | mylar |
| C107, 157 | 1-131-236-00 | (B) 1 | 25V | tantalum |
| C108 | 1-123-323-00 | (B) 470 | 16V | elect |
| C201, 251 | 1-108-575-00 | (B) 0.0068 | | mylar |
| C202, 252 | 1-121-726-00 | (B) 0.47 | 50V | elect |
| C203, 253 | 1-102-106-00 | (A) 100p | | |
| C204 | 1-121-261-00 | (B) 220 | 35V | elect |
| C205, 255 | 1-121-479-00 | (B) 22 | 16V | elect |








⇒ : Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.


Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

| Ref. No. | Part No. | Description |
|-------------------------|--------------|---------------------------|
| C206, 256 | 1-121-352-00 | (B) 47 10V elect |
| C207, 257 | 1-102-951-00 | (A) 15p |
| C208, 258 | 1-108-587-00 | (B) 0.022 mylar |
| C209, 259 | 1-108-607-00 | (B) 0.15 mylar |
| C210, 260 | 1-108-587-00 | (B) 0.022 mylar |
| C211, 261 | 1-108-567-00 | (B) 0.0033 mylar |
| C212 | 1-121-419-00 | (B) 220 6.3V elect |
| C213, 263 | 1-123-196-11 | (B) 100 10V elect |
| C214, 264 | 1-102-958-00 | (A) 20p |
| C215, 265 | 1-123-196-11 | (B) 100 10V elect |
| C216 | 1-121-357-00 | (B) 100 35V elect |
| C217 | 1-121-391-00 | (B) 1 50V elect |
| C218, 268 | 1-108-242-00 | (A) 0.022 mylar |
| C301 | 1-108-357-00 | (A) 0.012 mylar |
| C302 | 1-101-880-00 | (A) 47p |
| C303 | 1-102-074-00 | (A) 0.001 |
| C304 | 1-121-409-00 | (B) 47 16V elect |
| C305 | 1-102-115-00 | (A) 560p |
| C306 | 1-121-651-00 | (B) 10 16V elect |
| C401, 451 | 1-121-450-00 | (B) 2.2 50V elect |
| C402, 452 | 1-123-341-00 | (B) 10 35V elect |
| C403, 453, 454 | 1-102-106-00 | (A) 100p |
| C405, 406 | 1-101-005-00 | (A) 22 16V (nonpolarized) |
| C501 | 1-123-335-00 | (B) 330 25V elect |
| C502 | 1-121-261-00 | (B) 220 35V elect |
| C503 | 1-123-323-00 | (B) 470 16V elect |
| C504, 505 | 1-125-155-00 | (F) 6800 35V elect |
| C506, 507 | 1-125-155-00 | (F) 6800 35V elect |
| (AEP, E, UK, SCN model) | | |
| C508, 509 | 1-130-196-00 | (D) 0.01 polyethylene |

RESISTORS

All resistors are in ohms. Common $\frac{1}{4}\text{W}$ carbon resistors are omitted. Check schematic diagram for their values.

| | | | | |
|-----------|---|----------|-----------------------|----------------|
| R218 |  1-212-982-00 | (B) 100 | $\frac{1}{2}\text{W}$ | fusible |
| R219, 269 |  1-247-113-00 | (A) 180 | $\frac{1}{4}\text{W}$ | carbon |
| R220, 270 |  1-247-113-00 | (A) 180 | $\frac{1}{4}\text{W}$ | (nonflammable) |
| R221, 271 |  1-247-107-00 | (A) 100 | $\frac{1}{4}\text{W}$ | carbon |
| R222, 272 |  1-247-115-00 | (A) 220 | $\frac{1}{4}\text{W}$ | carbon |
| R223, 273 |  1-247-115-00 | (A) 220 | $\frac{1}{4}\text{W}$ | (nonflammable) |
| R224, 274 | 1-217-152-11 | (B) 0.33 | 2W | metal oxide |
| R225, 275 | | | | |
| R226, 276 |  1-212-958-00 | (B) 10 | $\frac{1}{2}\text{W}$ | fusible |

Note: Les composants identifiés par une tige et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: The components identified by shading and mark **▲** are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque **▲** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

| Ref. No. | Part No. | Description |
|-----------|----------------|---------------------------------------|
| R227, 277 | 1-244-861-00 | ▲ 330 ½W carbon |
| R229, 279 | 1-244-825-00 | ▲ 10 ½W carbon |
| R501, 502 | 1-244-883-00 | ▲ 2.7k ½W carbon |
| R504 | 1-206-463-11 | ▲ 10 2W metal oxide (nonflammable) |
| R505 | ▲ 1-212-934-51 | ▲ 1 ½W fusible |
| R230, 280 | ▲ 1-247-107-00 | ▲ 100 ¼W carbon (nonflammable) |
| RV201,251 | 1-226-647-00 | ▲ 100k, variable; MIC MIXING |
| RV202,252 | 1-226-649-00 | ▲ 250k, variable; BALANCE |
| RV203,253 | 1-226-503-00 | ▲ 250k, variable; VOLUME |
| RV204,254 | 1-226-648-00 | ▲ 100k, variable; BASS, TREBLE |
| RV205,255 | | |
| RT205 | 1-226-236-00 | ▲ 10k, adjustable; balance |
| RT206,256 | 1-226-235-00 | ▲ 5k, adjustable; bias |
| RT401,451 | 1-226-238-00 | ▲ 50k, adjustable; power level meter |
| RT402,452 | 1-226-241-00 | ▲ 500k, adjustable; power level meter |

SWITCHES

| | | |
|-----------|----------------|--|
| S1 | 1-553-033-00 | ▲ E Function; PHONO, TUNER, TAPE |
| S201, 251 | 1-553-157-00 | ▲ D Pushbutton, SPEAKERS (AEP, UK, SCN, E model) |
| | 1-553-259-00 | Pushbutton, SPEAKERS (US, Canadian model) |
| S501 | ▲ 1-552-531-00 | ▲ D Pushbutton, POWER (AEP, UK, E, SCN model) |
| | ▲ 1-552-631-00 | Pushbutton, POWER (US, Canadian model) |

JACKS

| | | |
|----------|--------------|----------------------------|
| J101-104 | 1-507-629-00 | ▲ E 4P; PHONO, TUNER, TAPE |
| J151-154 | | |
| J105 | 1-507-552-21 | ▲ D MIC |

| | | |
|-----------|--------------|----------------|
| J201, 251 | 1-507-553-00 | ▲ C HEADPHONES |
|-----------|--------------|----------------|

MISCELLANEOUS

| | | |
|-----------|----------------|---|
| CB201,251 | ▲ 1-532-566-00 | Breaker, circuit (US, Canadian model) |
| | ▲ 1-532-567-00 | ▲ C Breaker, circuit (AEP, UK, E, SCN model) |
| CB502 | ▲ 1-532-486-00 | Breaker, circuit (US, Canadian model) |
| | ▲ 1-532-535-00 | ▲ C Breaker, circuit (AEP, UK, E, SCN model) |
| CNJ501 | ▲ 1-526-574-00 | AC OUTLET (US, Canadian, E2 model) |
| CNJ503 | ▲ 1-526-636-00 | ▲ E AC OUTLET (AEP, UK, E1 model) |
| CNP501 | ▲ 1-551-628-00 | Cord, power; parallel-blade plug (US, Canadian, E2 model) |
| | ▲ 1-551-896-00 | ▲ E Cord, power; euro-plug (AEP, E1 model) |
| | ▲ 1-551-908-00 | ▲ E Cord, power (SCN model) |
| | ▲ 1-551-962-00 | ▲ E Cord, power (UK model) |

Note: Circled letters (A to Z) are applicable to European models only.

| Ref. No. | Part No. | Description |
|-----------|----------------|---|
| L201, 252 | 1-420-838-00 | ▲ B Coil |
| PT501 | ▲ 1-446-592-00 | ▲ P Cord, power (AEP, UK, SCN model) |
| | ▲ 1-446-593-00 | Cord, power (US model) |
| | ▲ 1-446-594-00 | Cord, power (E1, E2, model) |
| | ▲ 1-446-595-00 | Cord, power (Canadian model) |
| | ▲ A-4388-205-A | Complete Circuit Board, power amp |
| | ▲ 1-526-576-21 | ▲ D Selector, voltage (E model) |
| | ▲ 1-535-114-00 | ▲ A Terminal, 1P |
| | 1-535-116-00 | ▲ A Terminal, 3P |
| | ▲ 1-535-117-00 | ▲ A Terminal, 4P |
| | ▲ 1-535-139-00 | ▲ A Base Post 19mm (10mm pitch) |
| | 1-535-140-00 | ▲ A Base Post 19mm (10mm pitch) |
| | 1-536-524-00 | ▲ C Terminal Board, 4P; SPEAKER A, B |
| | ▲ 1-560-265-00 | ▲ A Base Post (U-TYPE) |
| | ▲ 1-601-472-00 | ▲ C Printed Circuit Board, LED |
| | ▲ 1-601-473-00 | ▲ B Printed Circuit Board, balance and mixing |
| | ▲ 1-601-474-00 | ▲ F Printed Circuit Board, power amp |
| | ▲ 1-601-475-00 | ▲ B Printed Circuit Board, headphone |
| | ▲ 1-601-476-00 | ▲ B Printed Circuit Board, mic jack |
| | ▲ 1-601-477-00 | ▲ B Printed Circuit Board, pin jack |
| | ▲ 1-601-478-00 | ▲ B Printed Circuit Board, tone control |
| | ▲ 1-601-479-00 | ▲ B Printed Circuit Board, function switch |
| | ▲ 1-601-480-00 | ▲ B Printed Circuit Board, master volume |
| | ▲ 1-601-481-00 | ▲ B Printed Circuit Board, power supply |
| | ▲ 1-601-482-00 | ▲ B Printed Circuit Board, voltage selector |
| | ▲ 1-601-483-00 | ▲ B Printed Circuit Board, power switch (AEP, UK, E, SCN model) |
| | ▲ 1-601-484-00 | ▲ B Printed Circuit Board, speaker switch (AEP, UK, SCN, E model) |
| | 1-601-814-00 | ▲ B Printed Circuit Board, speaker switch (US, Canadian model) |

ACCESSORIES AND PACKING MATERIALS

| Part No. | Description |
|----------------|--|
| ▲ 1-551-966-00 | ▲ G Adaptor, power cord (AEP, E1 model) |
| ▲ 1-551-967-00 | ▲ E Adaptor, power cord (UK model) |
| 3-701-630-00 | ▲ A Bag, plastic |
| 3-770-993-11 | ▲ C Manual, instruction (AEP, UK, E, Canadian model) |
| 3-770-993-21 | Manual, instruction (US model) |
| 3-770-993-21 | Manual, instruction (Canadian model) |
| 3-794-577-31 | |
| 4-864-354-00 | ▲ B Sheet, plastic |
| 4-893-521-00 | Carton (Canadian model) |
| 4-893-522-00 | ▲ E Carton (US, AEP, UK, E, SCN model) |
| 4-893-533-00 | ▲ B Cushion |

• Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

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